

CLAIMS:

1. A transponder comprising a chip (5) having contact pads (7) and at least two coupling elements (8), which are conductively connected with the contact pads (7),

characterized in that

the coupling elements (8) are touch-free relative to each other and formed in a self-supported as well as free-standing way and are essentially extended parallel to the chip plane,

the total mounting height of the transponder corresponds essentially to the mounting height of the chip (5), and

the coupling elements (8) are in geometry and size adapted for acting as a dipole antenna or in conjunction with an evaluation unit as a plate capacitor.

2. The transponder of claim 1, characterized in that the coupling elements (8) formed as a dipole antenna are adapted for operation at a working frequency of more than 2,45 GHz.

3. The transponder of claim 1 or 2, characterized in that the coupling elements (8) formed as a dipole antenna are adapted for operation at a working frequency of at least 24,125 GHz.

4. The transponder of one of the claims 1 to 3, characterized in that the coupling elements (8) formed as a dipole antenna are formed in a meandrous way.

0 5. The transponder of one of the claims 1 to 4, characterized in that the connection of the coupling elements (8) with the contact pads (7) is performed on the wafer.

5 6. A transponder comprising a chip (5) having a contact pad (7) and a coupling element (8), which is conductively connected with the contact pad (7),

characterized in that

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the coupling element (8) is formed in a self-supported as well as free-standing way and is essentially extended parallel to the chip plane,

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the total mounting height of the transponder corresponds essentially to the mounting height of the chip (5), and

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the coupling element (8) is in geometry and size adapted for acting in conjunction with an evaluation unit as a plate capacitor.

7. The transponder of claim 6, characterized in that the connection of the coupling element (8) with the contact pad (7) is performed on the wafer.

8. A method of manufacturing transponders, each comprising a chip (5) having contact pads (7) and at least two coupling elements (8), which are conductively connected with the contact pads (7), the method comprising the steps of:

0 providing a plurality of pre-fabricated chips (5) having contact pads (7), in a grouping given by a wafer;

5 providing a metallized plastic film or a metallic film for forming coupling elements (8);

10 manufacturing transponders by connecting the metallized plastic film or the metallic film with the contact pads (7) of the chips (5), whereby before, during or after the connecting the coupling elements (8) are formed out of the film and wherein these coupling elements (8) are in geometry and size adapted for acting as a dipole antenna or in conjunction with an evaluation unit as a plate capacitor; and

15 extracting the transponders from the grouping defined by the wafer such, that the coupling elements (8) of the extracted transponders are self-supporting and free-standing and essentially extended parallel to the chip plane, so that the total mounting height of the transponder corresponds essentially to the mounting height of the chip (5).

25 9. The method of claim 8, characterized in that the coupling elements (8), which are formed as a dipole antenna, are formed for operation at a working frequency of more than 2,45 GHz.

30 10. The method of claim 8 or 9, characterized in that the coupling elements (8), which are formed as a dipole antenna, are formed for operation at a working frequency of at least 24,125 GHz.

- 0 11. The method of one of the claims 8 to 10, characterized in that the coupling elements (8)), which are formed as a dipole antenna, are formed in a meandrous way.

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